

Sub. Spec.

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**ELECTROMOTIVE DRIVE SYSTEM FOR USE WITH A PUMP OF A
POWER-ASSISTED STEERING SYSTEM IN A MOTOR VEHICLE**

Background of the Invention

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5 The invention relates to an electromotive drive system especially suited for use with a pump of a power-assisted steering system of a motor vehicle of the type having a housing, a shaft support containing a shaft on which a rotor is rigidly affixed, and a stator with drive windings which is traversed and retained by the shaft support.

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10 As a rule, electromotive pumps are employed with power-assisted steering systems. In these pumps, the motors are typically designed in such a manner that the pumps are operated at full load for only brief periods of time. When the prior art motors with integrated hydraulic power-assisted steering system pumps are operated at full load, 15 disturbing whistling noises are often generated which are attributable to relatively high frequency torque variations.

Known electromotive drives and pumps have an electric motor including a stator and a rotor. The rotor is typically an external rotor that encompasses the stator. 20 The stator is positioned on a shaft support which extends through the stator and is firmly connected with the stator. In addition, for transmission of the torque from the stator to the remaining housing, an axial split pin is installed between the stator and the shaft support. The axial pin is 25 arranged between opposite recesses formed in the interior wall of the stator and the exterior wall of the shaft support. At the underside of the stator, the connecting contacts of the stator windings are joined with a base plate arranged between the stator and the bottom of the housing. 30 The control electronics for the motor or the pump are also typically arranged on the base plate.

In prior art motors, the axial split pin is provided for non-positive and positive coupling of the